

## Message Text

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APPROVED BY: SCI/SA:AERICHMOND,JR.

EUR/CE: MR. SUTTERLIN (INFO)

WHITE HOUSE: MR. DAM (INFO)

TREASURY: OFF. OF THE SECRETARY (INFO)

S/S: MR. GAMMON

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SUBJECT: NATIONAL MEDAL OF SCIENCE

FOR SHULTZ ONLY

PLEASE PASS THIS MESSAGE TO SECRETARY  
OF THE TREASURY GEORGE SHULTZ

DR. H. GUYFORD STEVER, DIRECTOR OF NSF AND SCIENCE ADVISER, AT THE  
REQUEST OF KENNETH DAM, WHITE HOUSE, IS PLEASED TO PROVIDE THE  
FOLLOWING MATERIAL WHICH SECRETARY SHULTZ MAY WISH TO CONSIDER  
IN PREPARING HIS REMARKS FOR THE NATIONAL MEDAL OF SCIENCE LUNCHEON  
ON OCTOBER 10, 1973.

PROPOSED OUTLINE

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NATIONAL MEDAL OF SCIENCE LUNCHEON REMARKS

BY SECRETARY GEORGE P. SHULTZ

OCTOBER 10, 1973

SCIENCE, TECHNOLOGY, AND NATIONAL PURPOSE

I. INTRODUCTION

A. WHAT DOES THE MEDAL OF SCIENCE REPRESENT?

IT SYMBOLIZES THE IMPORTANCE THIS NATION PLACES ON MAN'S  
ETERNAL QUEST FOR KNOWLEDGE--ABOUT HIMSELF AND ABOUT HIS ENVIRONMENT.  
IN THE WORDS OF VANNESVAR BUSH: QUOTE IT IS THE PRIVILEGE OF MAN  
TO LEARN TO UNDERSTAND, AND THAT IS HIS MISSION. KNOWLEDGE  
FOR THE SAKE OF UNDERSTANDING, NOT MERELY TO PREVAIL, THAT IS THE  
ESSENCE OF OUR BEING. UNQUOTE

B. CHANGING NATURE OF THIS QUEST.

SCIENCE IS A FIELD THAT HAS KNOWN ALMOST EXPLOSIVE GROWTH,  
BEGINNING WITH WORLD WAR II. THE GREAT MAJORITY OF THE SCIENTISTS  
IN THE HISTORY OF MAN ARE ALIVE TODAY. THIS GROWTH WAS  
STIMULATED BY URGENT DEMANDS--NATIONAL CRISES--WHICH REQUIRED  
MOBILIZATION OF ALL AVAILABLE RESOURCES. WHEN THE NATION NEEDED  
THIS SUPPORT THERE WAS A RESERVOIR OF TALENTED SCIENTISTS  
AND THE FUNDAMENTAL UNDERSTANDING ON WHICH TO BUILD. AS SOCIETY  
AND ITS PROBLEMS HAVE CONTINUED TO BECOME  
MORE COMPLEX, WE ARE AGAIN MOBILIZING OUR SCIENTIFIC AND TECHNICAL  
RESOURCES TO AID IN DEALING WITH THESE PROBLEMS. BUT OUR PERCEPTION  
OF THE NATURE OF THESE PROBLEMS HAS ALSO CHANGED--WE NO LONGER  
ACCEPT UNRESTRAINED APPLICATION OF THE PRODUCTS OF OUR TECHNOLOGY  
AS DESIRABLE UNLESS WE HAVE AN UNDERSTANDING OF THE CONSEQUENCES--  
IN HUMAN OR ENVIRONMENTAL TERMS.  
SCIENCE HAS LED THE WAY IN RECOGNIZING SUBTLE SIDE-EFFECTS  
OF TECHNOLOGY-- AND HOLDS THE PROMISE OF LEARNING TO COPE WITH  
THEM SUCCESSFULLY.

C. CHARACTERISTICS OF MEDALISTS AND THEIR ACTIVITIES

1. SOME OBVIOUS FEATURES ARE DIVERSITY OF INSTITUTIONS (PRIVATE AND  
PUBLIC, PROFIT-MAKING AND ACADEMIC), VARIED DISCIPLINES (   
CHEMISTRY, PHYSICS, BIOLOGY, MATHEMATICS, AND ENGINEERING), AND  
DIVERSE NATIONAL ORIGINS (POLAND, AUSTRIA, HOLLAND, AND GERMANY  
IN ADDITION TO U.S.).

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W. EXTRAORDINARY BREADTH OF ACTIVITIES.

A. EXPLORATION OF SUBTLE PHENOMENA MOTIVATED PRINCIPALLY BY THE  
DESIRE FOR UNDERSTANDING (ELEMENTARY PARTICLES, BIOCHEMISTRY)

B. DIAGNOSTIC SCIENCE AND METHODOLOGY FOR MAJOR PUBLIC PROGRAMS  
(SMOG, STATISTICAL METHODS)

C. DEVELOPMENT OF ENGINEERING CONCEPTS FOR ALMOST IMMEDIATE USE  
(AERO-DYNAMICS, CATALYTIC REFINING).

## II. THE BASIS FOR ACHIEVEMENT

A. THIS BREADTH OF ACHIEVEMENT IS IN KEEPING WITH OUR NATIONAL COMMITMENT TO EXCELLENCE IN SCIENCE AND TECHNOLOGY ACROSS THE BOARD, AND TO OUR NATIONAL DETERMINATION TO MAINTAIN THIS POSITION AT OR NEAR THE FOREFRONT IN EVERY MAJOR SCIENTIFIC AND TECHNOLOGICAL AREA. IN A WORLD OF RAPIDLY CHANGING NATIONAL PRIORITIES, WHY IS THE UNITED STATES SO DETERMINED TO MAINTAIN THIS COMMITMENT?

### 1. INVESTMENT AND INSURANCE--

SINCE NO ONE CAN TELL AT THIS TIME WHAT ALL THE PROBLEMS OF SOCIETY WILL ULTIMATELY TURN OUT TO BE, SCIENTIFIC ACTIVITY MAY BE REGARDED AS AN INVESTMENT IN THE FUTURE AND INSURANCE AGAINST THE UNFORESEEABLE. SCIENCE SHARPENS OUR CAPABILITY TO MEASURE AND DETECT CHANGES IN THE PHYSICAL AND SOCIAL STATE OF THE WORLD-- AND THEREFORE TO RECOGNIZE THE ONSET OF NEW PROBLEMS. AT THE SAME TIME, IT ENHANCES THE DIAGNOSTIC AND CURATIVE CAPABILITIES WE CAN BRING TO BEAR BOTH UPON EXISTING PROBLEMS AND UPON THOSE WHICH WILL DEVELOP IN THE FUTURE. IN SHORT, SCIENTIFIC RESEARCH HELPS TO MAINTAIN SOCIETY IN A POSTURE OF READINESS AND ADAPTABILITY AGAINST UNEXPECTED CONTINGENCIES. WHEN WE ARE CONFRONTED WITH SOME GROSS INTRUSION OR DISRUPTION OF OUR ENVIRONMENT, WE DON'T NEED SOPHISTICATED ANALYSIS TO TELL US WE HAVE A PROBLEM. BUT WHEN WE ARE CONFRONTED WITH SUBTLE EFFECTS OF A LONG-RANGE CHARACTER WE NEED TO HAVE AS MUCH ADVANCE WARNING AS POSSIBLE. FOR EXAMPLE, AT ONE TIME DDT WAS THOUGHT TO BE AN UNMIXED BLESSING TO HUMANITY. NOW WE KNOW DIFFERENTLY. BUT WE TEND TO FORGET WHAT IS INVOLVED MERELY IN BEING ABLE TO SAY WITH CONFIDENCE THAT DDT HAS BEEN FOUND IN ANTARCTIC ANIMALS ON THE LEVEL OF PARTS PER BILLION. WHAT IS INVOLVED, OF COURSE, ARE CAPABILITIES WHICH ARE THE CUMULATIVE RESULT OF MANY YEARS OF BASIC RESEARCH. FURTHERMORE, THE INSECT CONTROL TECHNIQUES WHICH WE ARE NOW URGENTLY DEVELOPING AS SUBSTITUTES FOR DDT ARE FOUNDED UPON BASIC RESEARCH IN INSECT PHYSIOLOGY

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WHICH WAS UNDERTAKEN FOR PURELY INTELLECTUAL REASONS BEFORE THE DANGERS OF DDT WERE UNDERSTOOD.

### 2. ECONOMIC IMPORTANCE--THERE

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